

FORCE BALANCED BULLER-CONE BITS,
SYSTEMS, DRILLING METHODS, AND
DESIGN METHODS

Inventor: Shilin Chen
Date Filed: January 28, 2004
Attorney's Docket: 074263.0213 (SC-98-025 C3-D)
Sheet 1 of 8

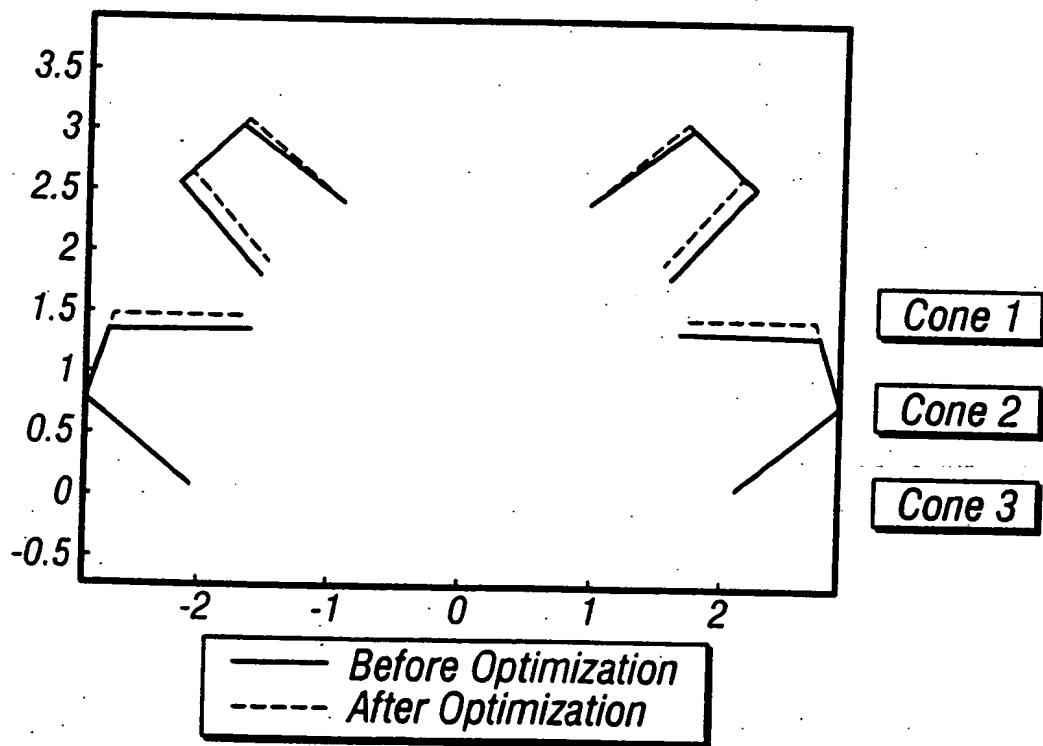
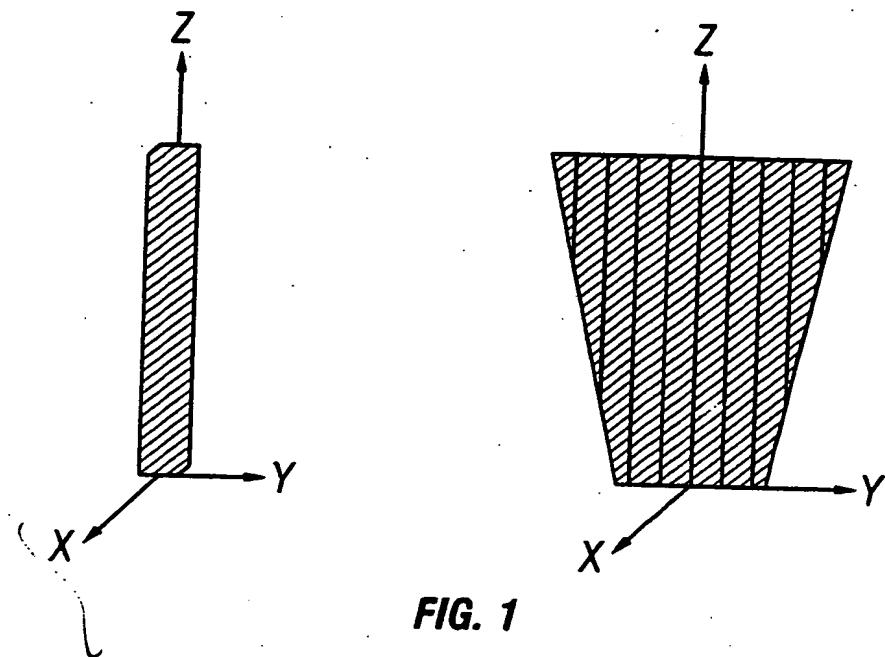


FIG. 7C

FORCE-BALANCED ROLLER-CONE BITS,
SYSTEMS, DRILLING METHODS, AND
DESIGN METHODS

Inventor: Shilin Chen

Date Filed: January 28, 2004

Attorney's Docket: 074263.0213 (SC-98-025 C3-D)

Sheet 2 of 8

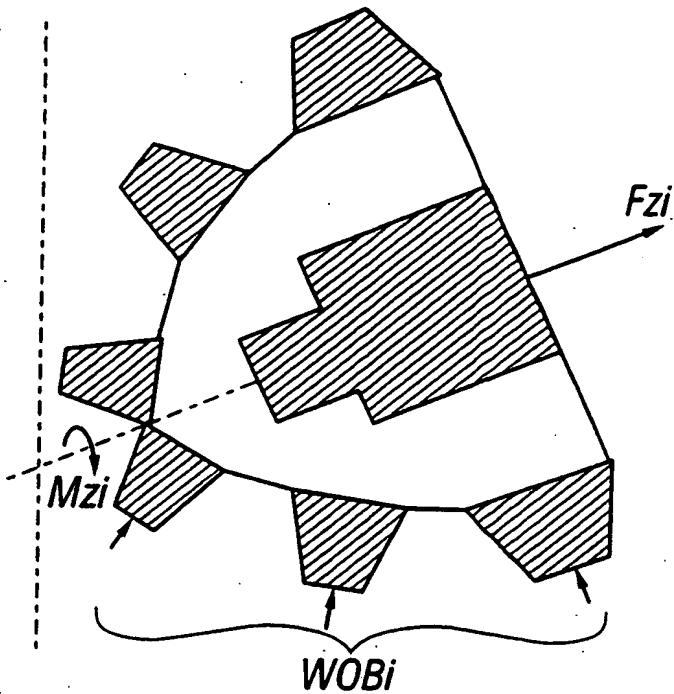


FIG. 2

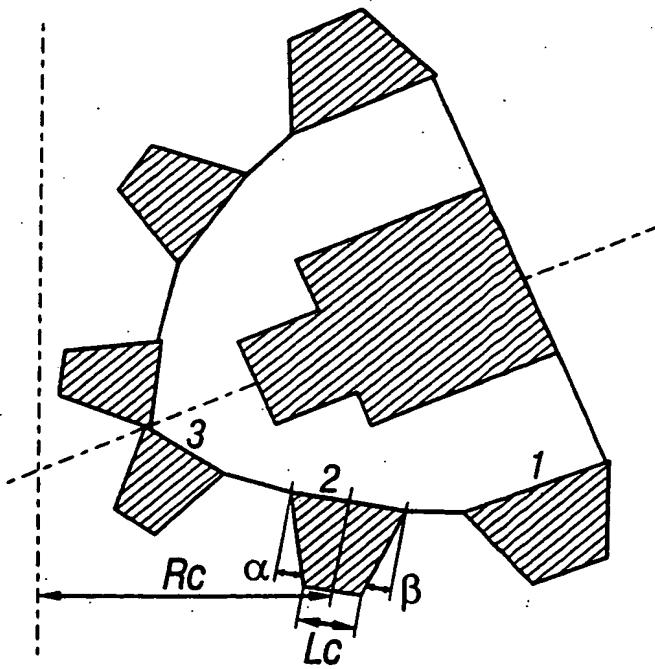


FIG. 3

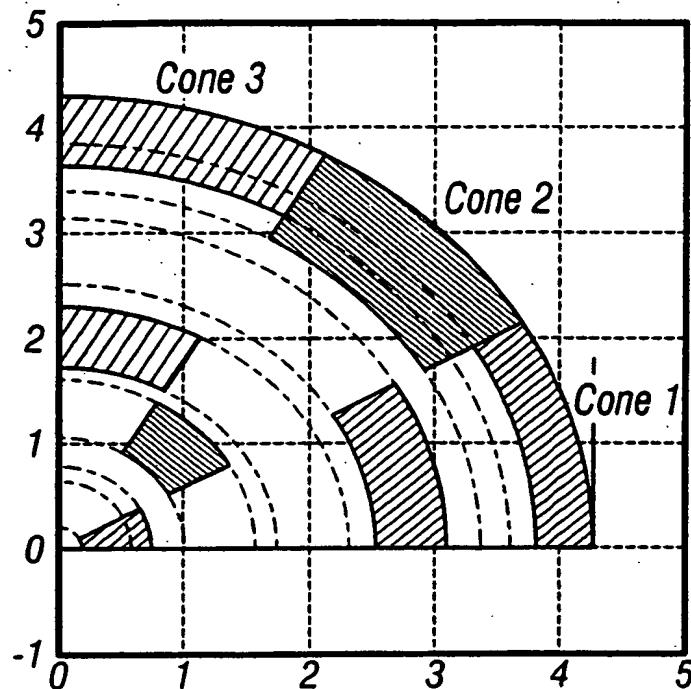


FIG. 4

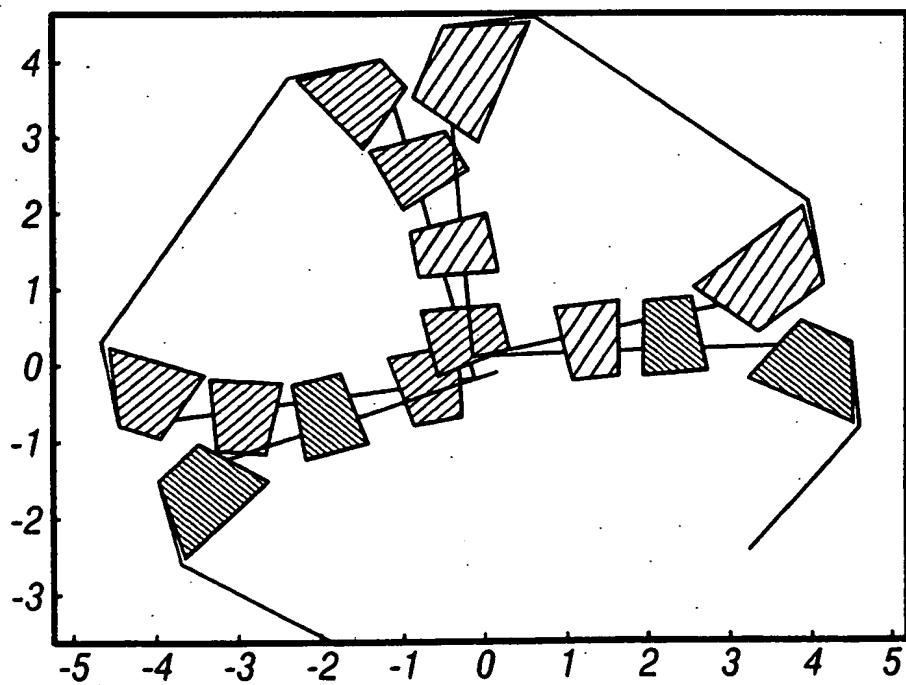


FIG. 5

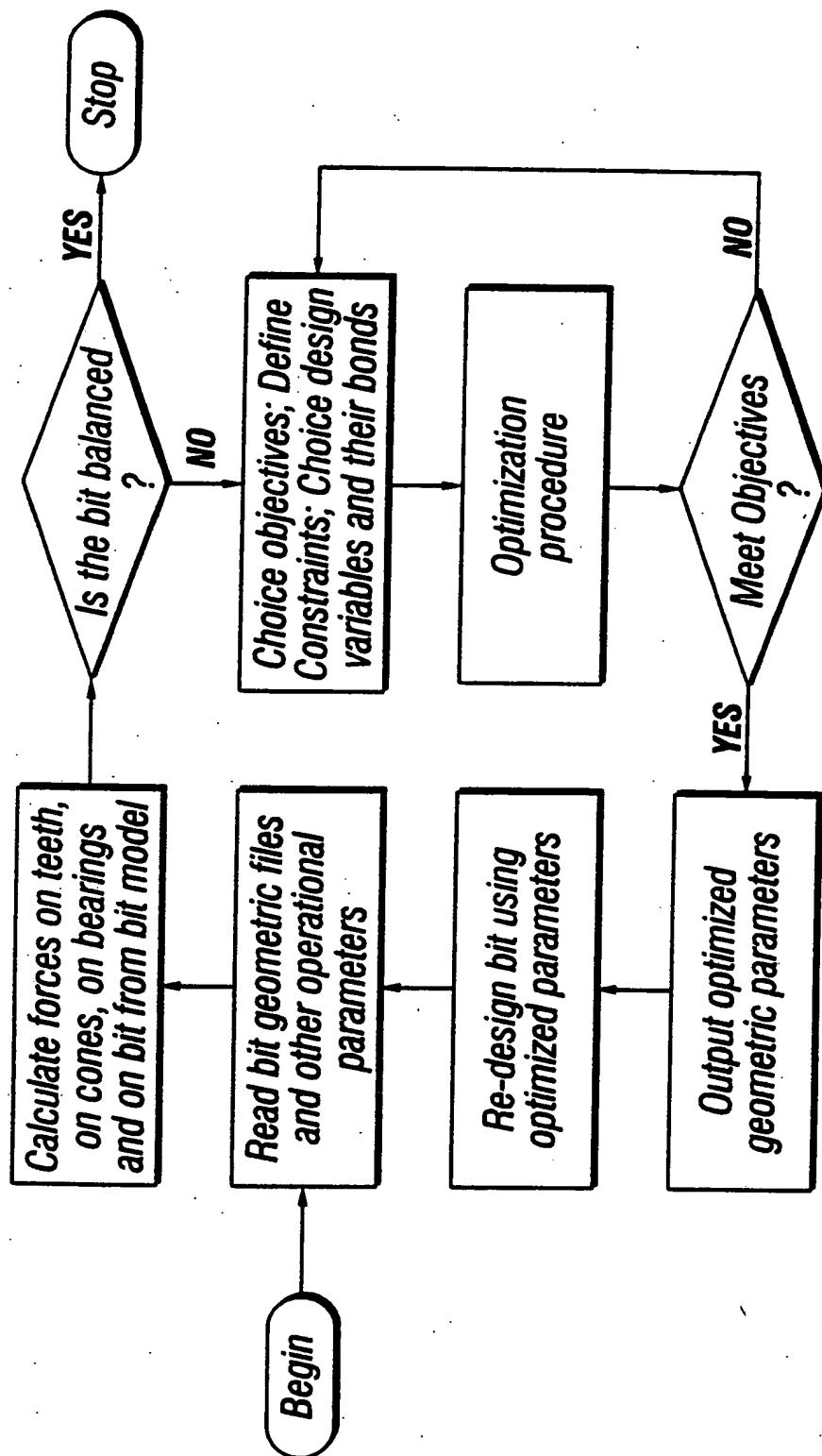


FIG. 6

U/U

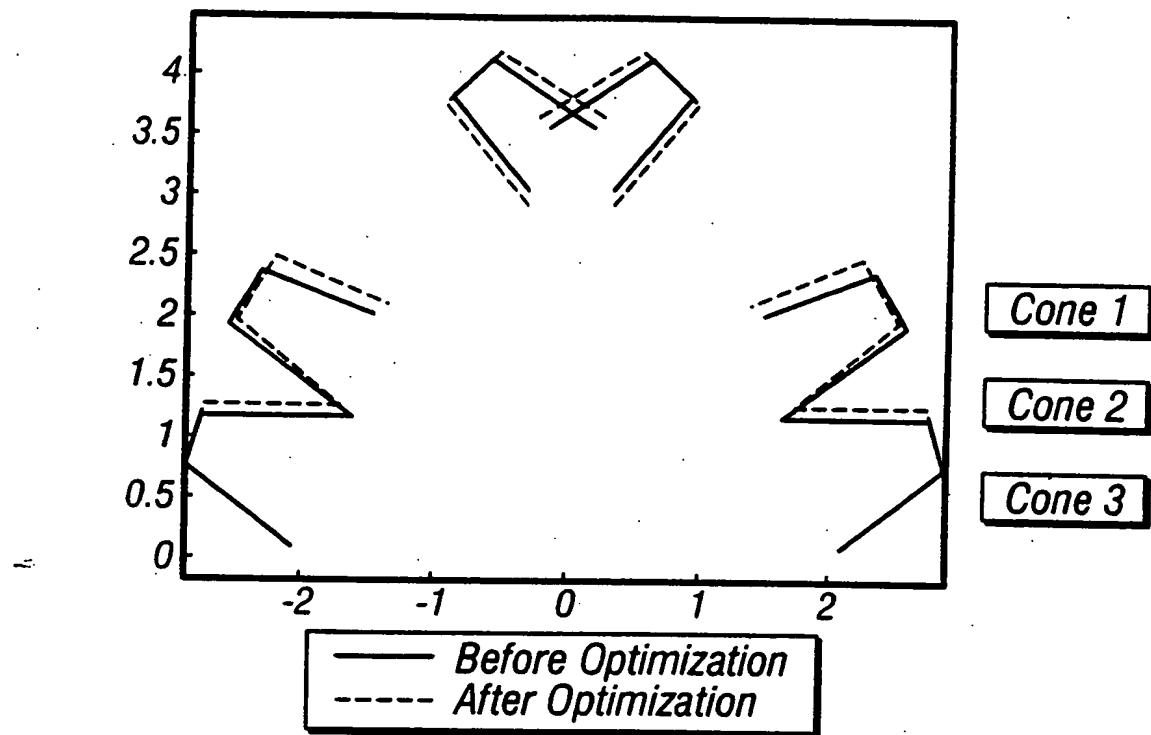


FIG. 7A

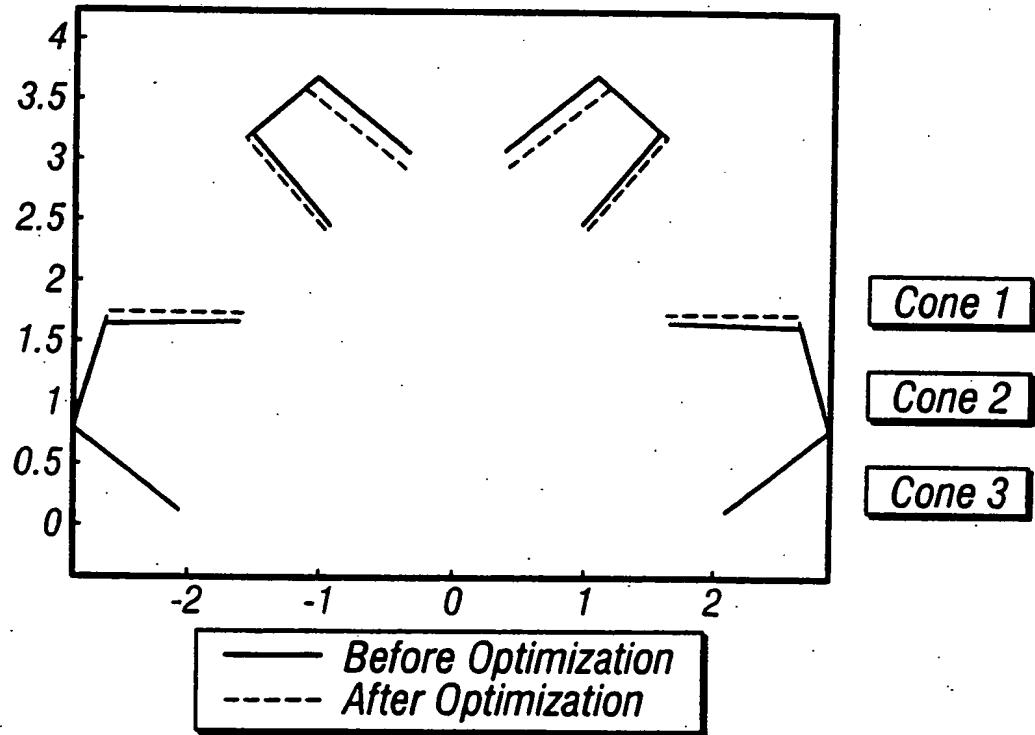


FIG. 7B

FORCE-BALANCED ROLLER-TRIANGLE BITS,
SYSTEMS, DRILLING METHODS, AND
DESIGN METHODS
Inventor: Shilin Chen
Date Filed: January 28, 2004
Attorney's Docket: 074263.0213 (SC-98-025 C3-D)
Sheet 6 of 8

U/U

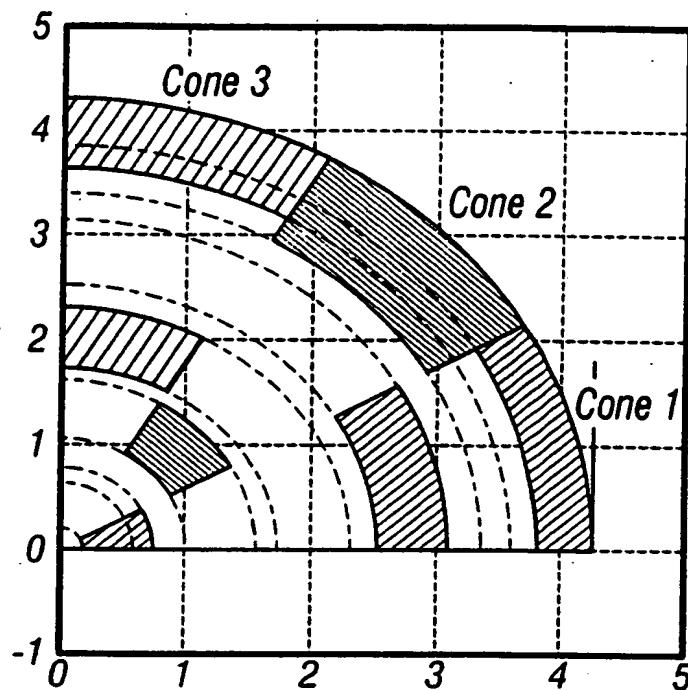


FIG. 8A

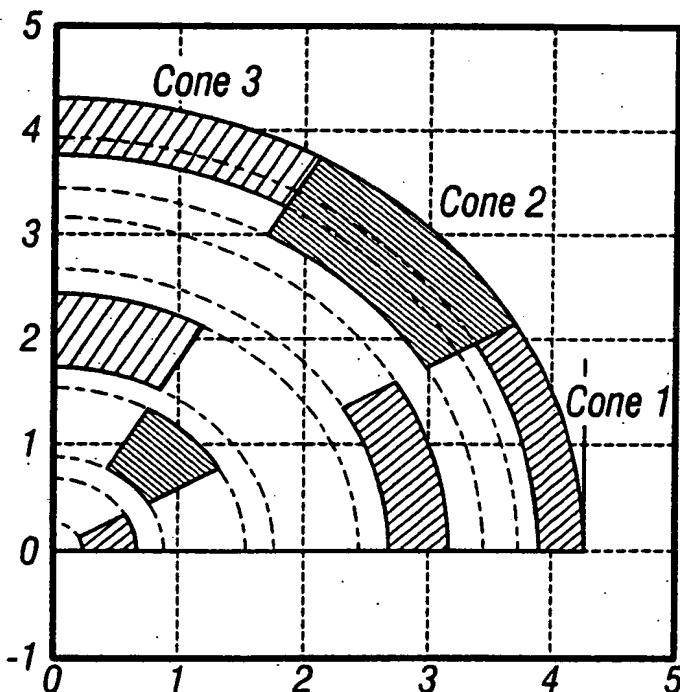


FIG. 8B

FORCE-BALANCED ROLLER-CONE BITS,
SYSTEMS, DRILLING METHODS, AND
DESIGN METHODS

Inventor: Shilin Chen
Date Filed: January 28, 2004
Attorney's Docket: 074263.0213 (SC-98-025 C3-D)
Sheet 7 of 8

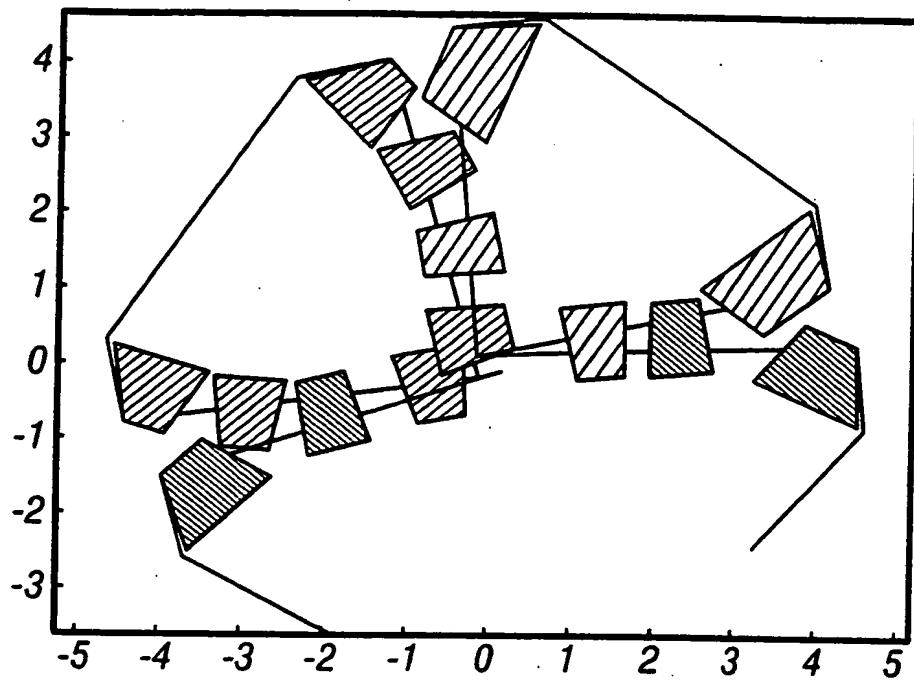


FIG. 9A

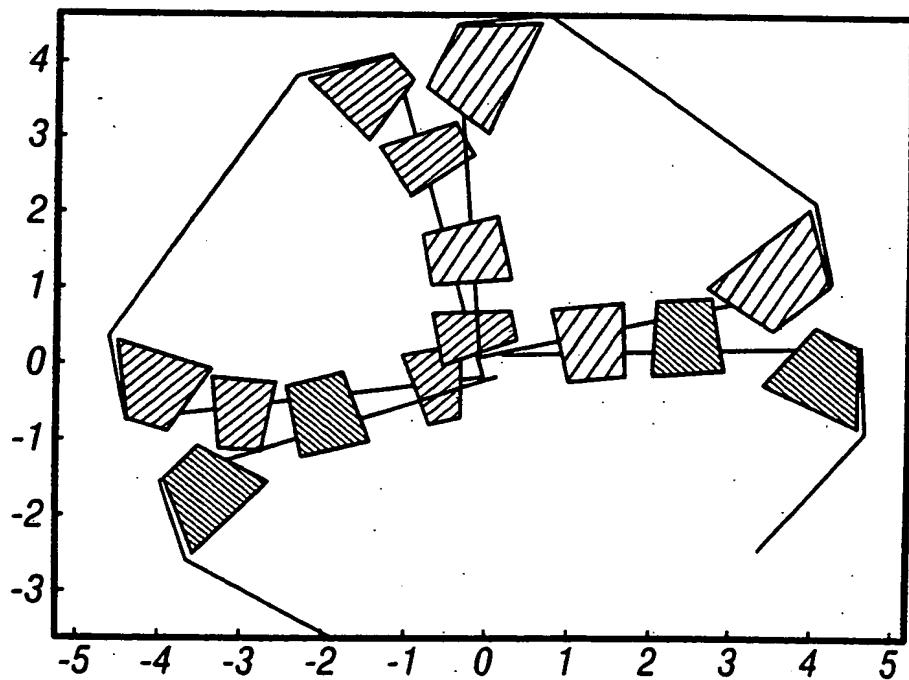


FIG. 9B

FORCE-BALANCED ROLLER-CONE BITS,
SYSTEMS, DRILLING METHODS, AND
DESIGN METHODS

Inventor: Shilin Chen
Date Filed: January 28, 2004
Attorney's Docket: 074263.0213 (SC-98-025 C3-D)
Sheet 8 of 8

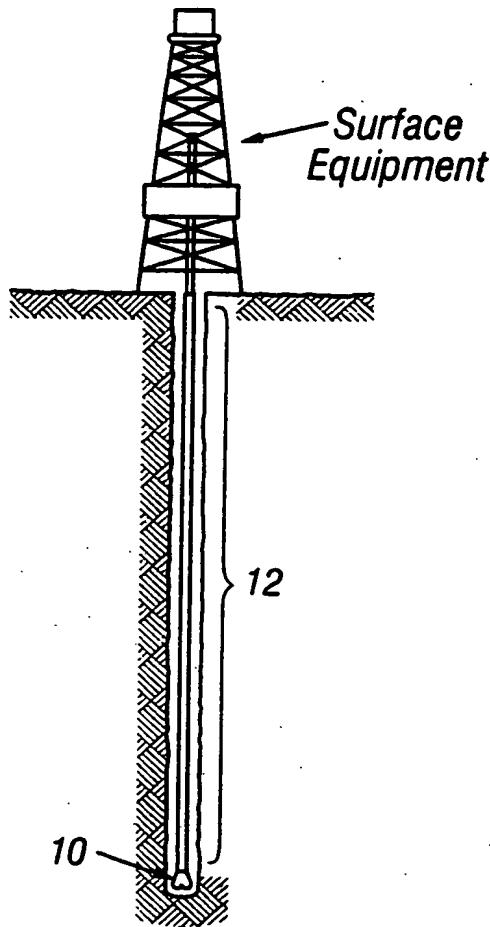


FIG. 10

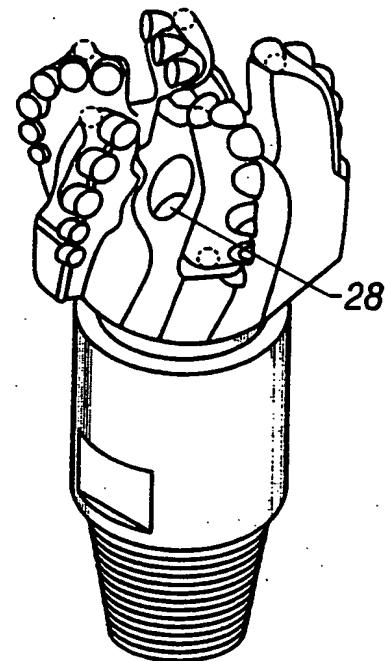


FIG. 11

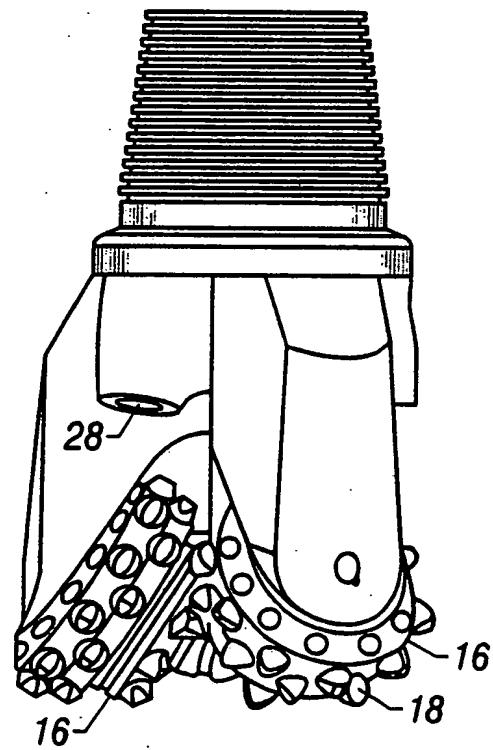


FIG. 12